

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for quantitatively analyzing specimen molecules, which method ~~which~~ comprises:

(1) simultaneously passing a solution containing the specimen molecules and a separate solution containing fluorescent probe molecules capable of forming a complex with the specimen molecules through a micro flow channel such that ~~a laminar flow is~~ flows are formed; formed therein, wherein diffusion of solutes in the solutions is accelerated by affinity between the fluorescent probe molecules and the specimen molecules to form complexes; and

~~(2) selectively promoting diffusion of the complex formed according to affinity between the fluorescent probe molecules and the specimen molecules in the laminar flow; and~~

~~(3)~~(2) fluorometrically determining the degree of diffusion of the ~~complex~~ complexes ~~formed between the specimen molecules and the probe molecules within the micro flow channel~~ by detecting signals emitted from the fluorescent probe molecules and comparing the results to a predetermined calibration curve to quantitatively analyze the specimen molecules.

2-3. (Cancelled)

4. (Currently Amended) A method for quantitative determination of a DNA fragment, which method comprises:

(1) simultaneously passing a solution containing a DNA fragment of a specified sequence as a specimen molecule and a separate solution containing a fluorescent probe molecule capable of forming a complex with the specimen molecule through a micro flow channel such that ~~a laminar flow is~~ flows are flow is formed; formed therein, wherein diffusion of solutes in the solutions is accelerated by affinity between the fluorescent probe molecules and the specimen molecules to form complexes; and

~~———(2) selectively promoting diffusion of the complex formed according to affinity between the fluorescent probe molecule and the specimen molecule in the laminar flow; and~~

~~(3)~~(2) detecting changes in the degree of diffusion of the ~~complex~~ the complexes ~~formed between the specimen molecule and the fluorescent probe molecule within the micro flow channel~~ by detecting signals emitted from the fluorescent probe molecule and comparing the

results to a predetermined calibration curve to fluorometrically determining the content of the specimen molecules.